

IN THE CLAIMS

This listing of claims will replace all prior versions, and listings, of claims in the application:

Listing of Claims:

1. - 6. (Canceled)

7. (Currently Amended) A method for reducing noise associated with an audio signal received through a microphone sensor array of a game controller during game play, comprising:

detecting a target signal component and a noise signal component from at least two microphones integrated with the game controller;

enhancing the target signal component of the audio signal by executing a beam-forming operation performed through a first filter;

blocking the target signal component by executing a reverse beam-forming operation through a second filter;

aligning an output of the second filter through an adaptive filter;

combining an output of the first filter and an output of the adaptive filter so that noise signal component is reduced without distorting the target signal;

monitoring an acoustic set-up associated with the audio signal as a background process using the beam-forming operation of the first filter and the reverse beam-forming operation of the second filter to track the target signal component; and

periodically setting a calibration of both a value of the first filter and a value of the second filter based upon the monitored acoustic set-up, the calibration of the values of the first filter and the second filter implements blind source separation that uses second order statistics to separate the target signal component from the noise signal component based on a frequency basis, to actively steer the first filter and the second filter toward the target signal component during game play, wherein the calibration remains fixed between the periodic setting;

wherein the target signal component is able to freely move around in 3-dimensional space with six degrees of freedom relative to the microphone array of the game controller.

8. (Cancel)

9. (Currently amended) The method of claim 8, wherein blind source separation enables further comprising; separating the target signal component and the noise signal component; and further comprising,

determining a time delay associated with each microphone sensor of the microphone sensor array.

10. (Canceled)

11. (Currently amended) The method of claim 7, wherein the acoustic set-up refers to relative position of the target signal component of a user and the microphone sensor array.

12. (Currently Amended) The method of claim 7, wherein the method operation of periodically setting the calibrating occurs about every 100 milliseconds.

13. - 24. (Canceled)

25. (Currently Amended) A system capable of isolating a target audio signal from multiple noise sources during active use, comprising:

a portable consumer device configured to move in positions that are independent from positions of a user during active use;

a computing device, the computing device including logic configured to enhance the target audio signal without constraining movement of the portable consumer device, the logic for enhancing the target audio signal using a beam-forming operation executed through a first

filter, logic for blocking the target audio signal using a reverse beam-forming operation executed through a second filter, logic for aligning an output of the second filter through an adaptive filter, logic for monitoring an acoustic set-up as a background process using the beam-forming operation of the first filter and the reverse beam-forming operation of the second filter to track a position of the target audio signal, and logic for periodically setting a calibration of both the first filter and the second filter based upon the monitored acoustic set-up, the calibration of the first filter and the second filter implements blind source separation that uses second order statistics to separate the target audio signal from a noise signal based on a frequency basis, to actively steer the first and the second filter toward the position of the target audio signal during game play; and

a microphone array affixed to the portable consumer device, the microphone array configured to capture audio signals, wherein a listening direction associated with the microphone array is actively adjusted only after each periodic setting of the calibration of both the first and second filters, during active use through the logic configured to enhance the target audio signal.

26. (Previously presented) The system of claim 25, wherein the computing device is in communication within the portable consumer device.

27. (Previously presented) The system of claim 26, wherein the computing device includes,

logic for combining the output of the first filter and the output of the second filter in a manner to reduce noise without distorting the target signal.

28. (Original) The system of claim 25, wherein the microphone array is configured in one of a convex geometry and a straight line geometry.

29. (Original) The system of claim 25, wherein a distance between microphones of the microphone array is about 2.5 centimeters.

30. (Original) The system of claim 25, wherein the portable consumer device is a video game controller and the computing device is a video game console.

31. (Currently Amended) A system for enhancing a target audio signal, comprising:

a microphone array affixed to a video game controller, the microphone array configured to detect an audio signal that includes the target audio signal and noise;

a computing system including circuitry configured to process the audio signal when received by the microphone array of the game controller, the computing system including filtering and enhancing logic to filter the noise using a reverse beam-forming operation and enhance the target audio signal using a beam-forming operation, monitoring logic using the beam-forming operation and the reverse beam-forming operation as a background process to monitor a change in position of the video game controller relative to a position of a source of the target audio signal during game play, wherein the filtering of the noise and enhancing the target audio signal includes periodically setting a calibration of the logic to filter the noise to actively steer the filtering and enhancing logic toward the position of the source of the target audio signal, wherein the calibration implements blind source separation and second order statistics to separate the target audio signal from the noise based on a frequency basis, and wherein the calibration remains fixed between the periodic setting.

32.-33 (Cancel)

34. (Currently amended) The video game controller of claim ~~[[32]]~~ 31, ~~wherein the separation filter logic includes, further comprising:~~

adaptive array calibration logic to perform the periodic monitoring and calibration, the adaptive array calibration logic configured to calculate a separation filter value, the separation filter value capable of adjusting a listening direction associated with the microphone array.

35.- 39. (Canceled)